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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,770	08/28/2003	Takashi Kojima	2635-170	5855

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EXAMINER	
GARBER, CHARLES D	

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H:A

Office Action Summary	Application No.	Applicant(s)	
	10/649,770	KOJIMA, TAKASHI	
	Examiner	Art Unit	
	Charles D. Garber	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *08/28/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, it is not clear if "one of the holes", "a center" or "elastic member" is the subject of modifying clause "on a plane extending perpendicular to a length of the gas sensor". It is also not clear if the center is a center as in a point or a plane as in the modifying clause. The lack of clarity renders the claim indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta et al. (US Patent 4,453,397) in view of Leach (US Patent 3,430,188).

Regarding claims 1 and 6, Ohta discloses a gas detecting sensor with sensor element or base body 1 within a housing generally defined by items 7, 71, 8. Items 13 and 14 may be considered to be cover with first and second ends extending from the housing as shown in figures 1 or 11. There are four or five lead wires 6 in various embodiments. There are also rubber (elastic) members 16 and 17 through which the wires pass.

Ohta does not expressly teach one of the wires passing through a center hole in the member. Ohta in fact does not show any details other than the wires passing hidden through members 16, 17 and cover 18 (and one wire in only one five wire embodiment passing through cover 14).

Leach teaches an electrical connector with connector body 12 molded of resilient (elastic) plastic around five wire-like leads 30, 32. The lead 30 is centrally located.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to arrange the five lead wires of Ohta to connect as taught by Leach. A connector allows for easy replacement without replacing the entire wire run. Further, the elastic body or member allows some bending or normal bending at the connection without breaking. Finally, the arrangement of five leads with one lead in the center and the remaining leads arranged symmetrically in a concentric circle is an optimum use of the space for the wires to pass. This will save space and allow for a more compact design.

As for claim 2, pipe 13 (cover) appears to be crimping the member 16 with about a 25 percent reduction in the diameter at the area of crimping from its normal diameter rather than the 10 to 20 percent of the instant invention.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to crimp by 10 to 20 percent, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. In this case the general conditions of the claim is considered to be a sufficient amount of crimping to ensure waterproofness without crushing the lead wires which is satisfied in the prior art.

As for claim 5, the rubber disclosed by Ohta is considered to be inherently insulating at least with respect to heat to which it is expressly resistant (column 4 lines 20-25).

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohta et al. (US Patent 4,453,397) as modified by Leach (US Patent 3,430,188) and applied to claim 1 above and further in view of Watanabe et al. (US Patent 5,874,664).

Regarding claim 3, the references do not expressly teach distances between holes and between holes and the outer periphery is 1 mm or more.

Watanabe teaches values t2 and t1 corresponding to the aforementioned distances respectively in a similar lead wire elastic member 2. The value t2 must be at least 1.0mm for proper waterproofness. Watanabe also teaches t1 is less than t2 but does not indicate by how much so it may be assumed to be minimal and t1 may be

approximately the same as t2, again for the purpose of achieving proper waterproofness. (column 13 line 46 to column 14 line 63)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to distances between holes and between holes and the outer periphery is 1 mm or more in order to achieve proper waterproofness.

As for claim 4, Watanabe also teaches annular ribs (figures 8A, 8B, 9A, 9B) in lead wire holes of the elastic member. The "provision for ribs allows the ribs to be more easily deformed, thereby obtaining a desired seal between the lead wires and the corresponding holes, resulting in an increased waterproofness of the air fuel ratio sensor."

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide annular ribs in the lead wire holes of the elastic member for increased waterproofness of the air fuel ratio sensor.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Garber whose telephone number is (571) 272-2194. The examiner can normally be reached on 6:30 a.m. to 3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cdg

CHARLES GARBER
PRIMARY EXAMINER